

WE CLAIM:

1. A process for heating a hydrocarbon stream including oxygenates and hydrocarbon unsaturates with reduction in formation of heavy molecular weight products during heating, the process comprising:
 - a) adding hydrogen to the hydrocarbon stream to form a mixed stream; and
 - b) heating the mixed stream,
 - c) wherein sufficient hydrogen is added to reduce the amount of heavy molecular weight products formed during heating as compared to a heated hydrocarbon stream without added hydrogen.
2. The process according to claim 1 wherein the oxygenates and unsaturates are selected from the group consisting of normal alcohols, mono-olefins, and mixtures thereof.
3. The process of claim 2, wherein the hydrocarbon stream comprises at least 0.5 wt% normal alcohols as oxygenates.
4. The process of claim 3, wherein the normal alcohols boil in the range of from about 50°C to about 350°C.
5. The process of claim 1, wherein the hydrocarbon stream is derived from a Fischer-Tropsch process.
6. The process of claim 5, wherein the oxygenates, and unsaturates are selected from the group consisting of normal alcohols, mono-olefins and mixtures thereof.
7. The process of claim 2, wherein the hydrocarbon stream comprises at least about 5.0 wt % mono-olefins.
8. The process of claim 2, wherein the hydrocarbon stream comprises at least about 15.0 wt % mono-olefins.
9. The process of claim 2, wherein the hydrocarbon stream comprises at least about 25.0 wt % mono-olefins.
10. The process of claim 9, wherein the mono-olefins boil in the range of from about -105 to 350°C.
11. The process of claim 1, wherein the hydrocarbon stream is a Fischer-Tropsch low-boiling fraction in a range from about -65°C to about 350°C.
12. The process of claim 1, wherein the hydrogen-containing gas is added in an amount less than about 500 Standard Cubic Feet per Barrel (SCFB).
13. The process of claim 12, wherein the hydrogen-containing gas is added in an amount less than about 100 SCFB.
14. The process of claim 13, wherein the hydrogen-containing gas is added in an amount less than about 50 SCFB.

15. The process of claim 1, wherein the hydrogen is provided by a hydrogen-containing gas.
16. The process of claim 15, wherein the hydrogen-containing gas is from a hydrogen production unit.
17. The process of claim 15, wherein the hydrogen-containing gas is recycled from a hydroprocessing operation.
18. The process of claim 15, wherein the hydrogen-containing gas is syngas or a fraction thereof.
19. The process of claim 1, wherein the mixed stream is heated to a temperature in the range of from about 120°C to about 400°C.
20. The process of claim 1, further comprising passing the heated mixed stream to a hydroconversion process.
21. In a refinery and/or chemical process which includes the heating of a hydrocarbon stream which includes process equipment, polymerizable fouling precursors, the improvement which comprises injecting an effective amount of a hydrogen containing gas into the hydrocarbon stream prior to heating operations to reduce or minimize equipment fouling.
22. The process according to claim 21, wherein the hydrogen-containing gas is injected at a rate of from 500 SCFB to 50 SCFB.
23. The process according to claim 22, wherein the injection is prior to the group selected from heat exchangers, furnaces or combinations thereof.
24. A process for hydroconversion of a hydrocarbon stream including oxygenates and hydrocarbon unsaturates with reduction in formation of heavy molecular weight products during heating, the process comprising:
- a) adding a first hydrogen-containing gas to the hydrocarbon stream sufficient to reduce the amount of heavy molecular weight products formed during heating as compared to a heated hydrocarbon stream without added hydrogen, to form a mixed stream;
 - b) heating the mixed stream;
 - c) adding a second hydrogen-containing gas to the heated mixed stream sufficient to effect hydroconversion of the mixed stream, to form a hydroconversion feed stream;
 - d) heating the hydroconversion feed stream to reaction temperature; and
 - e) hydroconverting the hydroconversion feed stream.
25. The process of claim 24, wherein the first hydrogen-containing gas is added in an amount less than about 500 Standard Cubic Feet per Barrel (SCFB).
26. The process of claim 25, wherein the first hydrogen-containing gas is added in an

amount less than about 100 SCFB.

27. The process of claim 26, wherein the first hydrogen-containing gas is added in an amount less than about 50 SCFB.

28. The process of claim 24, wherein the second hydrogen-containing gas is added in an amount more than 750 SCFB.

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29. The process of claim 24, wherein the mixed stream is heated to a temperature in the range of from about 120°C to about 300°C.

30. The process of claim 24, wherein the hydroconversion feed stream is heated to a temperature on the range of 250°C to about 400°C.